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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/037,415	01/04/2002	David Baltimore	75723-ZB/JPW/GJG	7747

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EXAMINER	
HIBBERT, CATHERINE S	

ART UNIT	PAPER NUMBER
1636	

MAIL DATE	DELIVERY MODE
05/06/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/037,415	BALTIMORE ET AL.	
	Examiner	Art Unit	
	CATHERINE HIBBERT	1636	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 April 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *89* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *89* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *See Continuation Sheet*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Continuation of Attachment(s) 3). Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date :7/18/2008; 8/11/2008; 10/14/2008; 2/9/2009; 2/26/2009.

DETAILED ACTION

Please note that the Examiner for this Application has changed. Applicants submittal filed 3 April 2008 and 7 December 2007 has been received and entered. Claims 1-88 are cancelled. Claim 89 is pending and under examination.

Any rejections/objections not repeated in this action are herein withdrawn.

Information Disclosure Statement

The Information Disclosure Statements filed 7/18/2008, 8/11/2008, 10/14/2008, 2/9/2009, and 2/26/2009 have been considered except for references that are indicated by a line-through for lacking a date.

Priority

Applicants request that the subject matter of Claim 89 be granted the 4/21/1989 effective filing date citing specific notations on pages 6-7 of Applicants Remarks filed 7 December 2007 is acknowledged. It is noted for the record that it is unclear how the specific notation pointing to page 28, line 27 of the '436 patent for support for the subject matter of Claim 89 is relevant because it appears that page 28 shows a Table and does not contain a line 27.

Nevertheless, priority for the subject matter of claim 89 is granted back to the filing date of the 07/341,436 patent (4/21/1989) because the subject matter of the instant Claim 89 which is directed to a method of reducing gene expression in a human cell, the method comprising contacting the cell with a composition that diminishes the activity of NF-kB so as to thereby reduce expression of the gene in the cell, was

determined to be granted back to the 07/341,436 patent (4/21/1989) in the recent court decision *Ariad Pharms., Inc. v. Eli Lilly & Co*. Appeal from the US District Court for the District of MA (Decided 3 April 2009) for claims directed to similar subject matter (see ODP rejection below).

Response to Amendment/Argument

Obviousness Type Double Patenting Rejections

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claim 89 STANDS rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-5, 7-17, 20-63, 88-176 and 192-203 of U.S. Patent No. 6,410,516 (hereafter the '516 patent). Although the conflicting claims are not identical, they are not patentably distinct from each other because both

sets of claims read on methods of regulating NF-κB mediated gene expression in a cell, comprising altering (inhibiting) NF-κB activity in the cell. The instant claim is generic to the claims recited in the '516 patent. That is, the recited claims of the '516 patent fall entirely within the scope of the instant claims, or in other words, the instant claim is anticipated by the claims of the '516 patent. For example, the various methods for inhibiting expression of NF-κB mediated gene expression in cells recited in the '516 patent are encompassed within the instant broad methodologies (i.e. the instant methods encompass any method of regulating NF-κB mediated gene expression in any cell). With regard to instant claim 89, this claim differs from the claims in the '516 patent in reciting that the external influence is an extracellular polypeptide whereas any external influence is recited in the '516 patent claims. Since the specification of the '516 patent specifically recites extracellular polypeptides as an external influence which can induce expression of genes by inducing NF-κB activation, it must be considered that this would have been an obvious species of external influence.

It is noted for the record that Claims 80, 95, 144, and 145 (which depend from Claims 7-9 and 14) of the '516 patent were held to be unpatentable in *Ariad Pharms., Inc. v. Eli Lilly & Co*. Appeal from the US District Court for the District of MA (Decided 3 April 2009), and that Claim 7-9, 14, 95 and 144-145 are included in the basis for the ODP.

Applicants have responded to this rejection (see Applicants Remarks, filed 3 April 2008) by indicating that they will file a Terminal Disclaimer upon indication of allowable subject matter should the allowable subject matter so require.

The rejection will therefore be **maintained.**

Claim 89 is provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 90-91 of copending Application No. 10/037,341 (hereafter the '341 application). It is noted that the '341 Application cancelled some conflicting claims and added new conflicting Claim 91 and thus this rejection has been adjusted accordingly. Although the conflicting claims are not identical, they are not patentably distinct from each other because both sets of claims recite the same methods of reducing expression in cells of a gene whose expression is modulated by NF-κB. The instant claims differ from those in the '341 application in that the instant claims recite a method for reducing expression of a gene in a human cell the expression of which is inducible by an extracellular polypeptide that activates NF-KB wherein the method comprises contacting the cell with a composition that diminishes NF-KB activity whereas the claims in the '341 application recite a method for reducing expression of a gene in a human cell the expression of which is inducible by any external influence and wherein the method comprises within the cell inhibiting transmission of the signal so as to reduce expression of the gene. The instant claims are obvious however, because the '341 application specifically recites the species of extracellular polypeptides as external influences that activate NF-KB and therefore said extracellular polypeptides would have been an obvious species for activation of NF-KB. With regard to the instant claims reading on contacting the cell with the composition that diminishes NF-KB activity, it is noted that diminishing activity of NF-KB within the cell

also results in inhibiting transmission of the signal (induced by NF-KB) in the cell since diminished NF-KB activity results in diminished signal transmission in the cell (as recited in the '341 claims).

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Applicants have not traversed this rejection and therefore **the previous rejection is maintained**.

New grounds of rejection

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 89 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 89 is indefinite because it is unclear whether the preamble to the one active method step is meant to impart a requirement for an order of events that must occur in a particular sequence in relation to the one active method step. For example, the one active method step recites "contacting the cell with a composition that diminishes the activity of NF-kB so as to thereby reduce expression of the gene in the cell". The antecedent basis for "the cell" in the phrase "contacting the cell", line 8, is unclear because it is unclear if the antecedent basis is found in the phrase "A method

for reducing expression in a human cell of a gene", lines 1-2, or instead is found in the term "the plasma membrane of the cell" in line 6-7 or alternatively in the term "the nucleus of the cell" in line 7. It appears that the antecedent basis for "the cell" in the one active method step is referring to the phrase "a human cell" in lines 1-2. However, it is unclear how the limitations that follow correlate to "the cell" of the active method step and therefore one of ordinary skill in the art would not be able to determine the metes and bounds of applicants invention.

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 89 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

It is noted that in the recent court decision *Ariad Pharms., Inc. v. Eli Lilly & Co*. Appeal from the US District Court for the District of MA (Decided 3 April 2009), Claims 80, 95, 144, and 145 (which depend from Claims 7-9 and 14) of U.S. Patent No. 6,410,516 (hereafter the '516 patent) were held to be unpatentable for failing to comply with the written description requirement. The court case stated that:

The written description requirement, "serves both to satisfy the inventor's obligation to disclose the technologic knowledge upon which the patent is based, and to demonstrate that the patentee was in possession of the invention that is claimed." Capon v. Eshhar, 418 F.3d 1349, 1357 (Fed. Cir. 2005). The requirement "serves a teaching function, as a quid pro quo in which the public is given meaningful disclosure in exchange for being excluded from practicing the invention for a limited period of time." Univ. of Rochester v. G.D. Searle & Co., 358 F.3d 916, 922 (Fed. Cir. 2004) (quoting Enzo Biochem, Inc. v. Gen-Probe Inc., 323 F.3d 956, 970 (Fed. Cir. 2002)); see O'Reilly v. Morse, 56 U.S. (15 How.) 62, 121 (1853) (explaining that a patentee "can lawfully claim only what he has invented and described, and if he claims more his patent is void"); Reiffen v. Microsoft Corp., 214 F.3d 1343, 1345–46 (Fed. Cir. 2000) ("The purpose of [the written description requirement] is to ensure that the scope of the right to exclude . . . does not overreach the scope of the inventor's contribution to the field of art as described in the patent specification.").

"To satisfy the written description requirement, 'the applicant does not have to utilize any particular form of disclosure to describe the subject matter claimed, but the description must clearly allow persons of ordinary skill in the art to recognize that he or she invented what is claimed.'" Carnegie Mellon Univ. v. Hoffmann La Roche Inc., 541 F.3d 1115, 1122 (Fed. Cir. 2008) (quoting In re Alton, 76 F.3d 1168, 1172 (Fed. Cir. 1996)). "In other words, the applicant must 'convey with reasonable clarity to those skilled in the art that, as of the filing date sought, he or she was in possession of the invention,' and demonstrate that by disclosure in the specification of the patent." Id. (quoting Vas-Cath Inc. v. Mahurkar, 935 F.2d 1555, 1563-64 (Fed. Cir. 1991)). Such disclosure need not recite the claimed invention in haec verba, but it must do more than merely disclose that which would render the claimed invention obvious. Rochester, 358 F.3d at 923; Regents of the Univ. of Cal. v. Eli Lilly & Co., 119 F.3d 1559, 1566–67 (Fed. Cir. 1997); see also PowerOasis, Inc. v. T-Mobile USA, Inc., 522 F.3d 1299, 1306–07 (Fed. Cir. 2008) (explaining that § 112, ¶1 "requires that the written description actually or inherently disclose the claim element").

"Whether the written description requirement is satisfied is a fact-based inquiry that will depend on the nature of the claimed invention and the knowledge of one skilled in the art at the time an invention is made and a patent application is filed." Carnegie Mellon, 541 F.3d at 1122 (citing Enzo, 323 F.3d at 963). The written description requirement is not satisfied by "[t]he appearance of mere indistinct words in a specification or a claim, even an original claim. . . . A description of what a material does, rather than of what it is, usually does not suffice." Enzo, 323 F.3d at 968 (citing Eli Lilly, 119 F.3d at 1568); see Rochester, 358 F.3d at 926 ("[G]eneralized language may not suffice if it does not convey the detailed identity of an invention.").

The same is true for both process claims and composition claims. Rochester, 358 F.3d at 926 ("Regardless whether a compound is claimed per se or a method is claimed that entails the use of the compound, the inventor cannot lay claim to that

subject matter unless he can provide a description of the compound sufficient to distinguish infringing compounds from non-infringing compounds, or infringing methods from non-infringing methods."). Where the specification provides only constructive examples in lieu of working examples, it must still "describe the claimed subject matter in terms that establish that the applicant was in possession of the claimed invention, including all of the elements and limitations." Id. (citing Hyatt v. Boone, 146 F.3d 1348, 1353 (Fed. Cir. 1998)).

Of course, what is adequate depends upon the context of the claimed invention. See Capon, 418 F.3d at 1358 ("The written description requirement must be applied in the context of the particular invention and state of the knowledge."). We have articulated a variety of factors to evaluate the adequacy of the disclosure supporting "generic claims to biological subject matter." Id. at 1359. These factors include "the existing knowledge in the particular field, the extent and content of the prior art, the maturity of the science or technology, [and] the predictability of the aspect at issue." Id.

The *Ariad* decision sets forth factors and criteria for determining written description. Because the pertinent claims of the '516 patent are very similar to the instant claim 89 (see ODP rejection above), and because the instant application 10/037,415 is a CONTINUATION of the '516 patent, the relevant criteria used for determining lack of written description for the '516 patent is approperiate and will be compared to the instant claim 89 and applied accordingly. The instant application fails to meet the criteria set forth by the *Ariad* decision in at least the following ways as shown in the Table below:

Current Claim	**Ariad Claims**	***Ariad v. Lilly* decision factors/criterion**	**Reasoning as to why current claim does not meet criteria**
89	80,95 144,145	Describes function but not what the composition is	The instant claim only defines the function
		A vague functional description and an invitation for further research does not constitute written disclosure	The instantly claimed methods comprising the single step of reducing NF-κB activity is not supported by written

			description because the specification of the '516 patent fails to adequately disclose how the claimed reduction of NF-κB activity is achieved. The specification of the '516 patent as does the current application, hypothesizes three classes of molecules potentially capable of reducing NF-κB activity: specific inhibitors, dominantly interfering molecules, and decoy molecules. However, this disclosure amounts to little more than a research plan, and does not satisfy the patentee's quid pro quo as described in Rochester. In Rochester, very similar method claims were held invalid for lack of written description. Id. (holding patent invalid because "Rochester did not present any evidence that the ordinarily skilled artisan would be able to identify any compound based on [the specification's] vague functional description"); see also Fiers v. Revel, 984 F.2d 1164, 1170–71 (Fed. Cir. 1993) (holding a claim to a genus of DNA molecules not supported by written description of a method for obtaining the molecules); cf. Eli Lilly, 119 F.3d at 1567–68 (holding claims to a broad genus of genetic material invalid because the specification disclosed only

			one particular species). Ariad attempts to categorically distinguish Rochester, Fiers, and Eli Lilly, because in those cases, the claims explicitly included the non-described compositions.
		Regardless of whether the claims recite a compound, the specification still must describe some way of performing the claimed methods. In the instant case, the specification suggests only the use of the three classes of molecules to achieve NF-κB reduction. Thus, to satisfy the written description requirement for the instant claims, the specification must demonstrate that Applicant possessed the claimed methods by sufficiently disclosing molecules capable of reducing NF-kB activity so as to "satisfy the inventor's obligation to disclose the technologic knowledge upon which the patent is based, and to demonstrate that the patentee was in possession of the invention that is claimed."Capon, 418 F.3d at 1357.	In accordance with Rochester, the '516 patent fails to adequately describe the claimed methods for reducing NF-κB activity, including adequate description of the three types of molecules necessary to perform the methods. The specification of the '516 patent hypothesizes three classes of molecules potentially capable of reducing NF-κB activity: specific inhibitors, dominantly interfering molecules, and decoy molecules. However, the example of a specific inhibitor given in the specification is I-kB, a naturally occurring molecule whose function is to hold NF-kB in an inactive state until the cell receives certain external influences. However, the Figure 43 which discloses important structural information regarding the sequence of DNA that encodes I-kB has been cancelled by Applicants from the instant specification. In addition, the specification does not provide sufficient written description for the dominantly interfering molecules. In addition,

			although the specification does provide specific examples of decoy molecules (DNA oligonucleotides) the specification does not adequately describe using those molecules to reduce NF-kB activity.
		Because written description is determined as of the filing date- - April 21, 1989 in the Ariad case and in the instant case,--evidence of what one of ordinary skill in the art knew in 1990 or 1991 cannot provide substantial evidence to support adequate written description. See Vas-Cath, 935 F.2d at 1563–64 (holding that a written description analysis occurs "as of the filing date sought").	Evidence of what one of ordinary skill in the art knew in 1990 or 1991 cannot provide substantial evidence to support adequate written description. See Vas-Cath, 935 F.2d at 1563–64 (holding that a written description analysis occurs "as of the filing date sought").
		Predictablility	Ariad explains that developing the subject matter of the '516 patent "required years of hard work, great skill, and extraordinary creativity—so much so that the inventors first needed to discover, give names to, and describe previously unknown cellular components as a necessary predicate for their inventions." Lilly offered the undisputed expert testimony of David Latchman that the field of the invention was particularly unpredictable. Thus, this invention was made in a new and unpredictable field where the existing knowledge and prior art was scant. See Capon, 418 F.3d at 1359.

The description requirement of the patent statue requires a description of an invention, not an indication of a result that one might achieve if one made that invention. See *In re Wilder*, 736, F.2d 1516, 1521, 222 USPQ 369, 372-73 (Fed. Cir. 1984) (affirming rejection because the specification does "little more than outlin[e] goals appellants hope the claimed invention achieves and the problems the invention will hopefully ameliorate.") Accordingly, it is deemed that the specification fails to provide adequate written description for the genus of the claims and does not reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the entire scope of the claimed invention.

Conclusion

No claims are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CATHERINE HIBBERT, whose telephone number is (571)270-3053. The examiner can normally be reached on Monday-Thursday from 8:00 AM to 5:30 PM. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christopher Low, can be reached on (571) 272-0739. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Catherine Hibbert
Examiner/AU1636

/ Christopher S. F. Low /

Supervisory Patent Examiner, Art Unit 1636